



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/654,394	09/01/2000	Susumu Yasuda	35.C14758	6267

5514 7590 09/27/2004

FITZPATRICK CELLA HARPER & SCINTO  
30 ROCKEFELLER PLAZA  
NEW YORK, NY 10112

EXAMINER
----------

ALLEN, DENISE S

ART UNIT	PAPER NUMBER
----------	--------------

2872

DATE MAILED: 09/27/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No. 09/654,394	Applicant(s) YASUDA ET AL.	
	Examiner Denise S Allen	Art Unit 2872	<i>AW</i>

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 21 July 2004.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1,2,4-6,11,16,21 and 26 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,2,4-6,11,21 and 26 is/are rejected.
- 7) ☒ Claim(s) 16 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 01 September 2000 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

**DETAILED ACTION*****Response to Arguments***

Applicant's arguments, see pages 12 – 13, filed July 21, 2004, with respect to the rejection of claim 1 under 35 U.S.C. 103(a) have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of Lee et al (US 6,563,238).

***Claim Objections***

Claim 16 is objected to because of the following informalities: claim 16 is dependent on a cancelled claim. Appropriate correction is required.

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1, 2, 4, 6, 11, and 21 are rejected under 35 U.S.C. 102(e) as being anticipated by Lee et al.

Regarding claim 1, Lee et al teaches an electromagnetic actuator (Figure 5) comprising a core (references 61, 64, 69, and 72) with a coil (references 62, 65, 70, and 73) wound around said core; two stators (reference 60 and 68) magnetically coupled to each end of said core; a movable element (reference 52) which is displaceable relative to said stators (column 7 line 67 – column 8 line 1); and supporting means (references 55 and 56) for supporting said movable element,

Art Unit: 2872

wherein said supporting means, said stators, and said movable element are made of the same material (column 8 lines 50 – 55), and wherein said stators and said movable element each have a projection and a depression (references 53, 54, 59, and 67) in such a way that the projection and depression of said stators engage with the projection and depression of said movable element (references 53 and 54 are interdigitated with references 59 and 67), side surfaces of the projection and depression being parallel to the displacement direction of the movable element and partially overlapping even if there is no electromagnetic force (see Figure 5).

Regarding claim 2, Lee et al teaches the supporting means and the stators are fixed onto a substrate (reference 51).

Regarding claim 4, Lee et al teaches the supporting means is a parallel hinge spring made up of a plurality of flat springs (reference 55 and to the right of reference 52) combined in parallel, and the projections and depressions of said stators and the projections and depression of said movable element are formed like comb-teeth parallel to the direction of movement of said parallel hinge spring (see Figure 5).

Regarding claims 6, 11, and 21, Lee et al teaches an optical scanner, comprising a movable mirror; and the electromagnetic actuator described above connected with the movable mirror (column 7 lines 13 – 20).

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 5 and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lee et al in view of Jerman et al (US 6,329,737).

Lee et al teaches an electromagnetic actuator as described above. Lee et al does not teach the supporting means is a concentric hinge spring combining a plurality of flat springs in a concentric radial form, and the projections and depressions of said stator and the projections and depressions of said movable element are formed like comb-teeth parallel to the direction of movement of said concentric hinge spring.

Jerman et al teaches an actuator (Figure 3) with projections and depression (references 427 and 432) and a supporting means that is concentric hinge spring (reference 256) combining a plurality of flat springs (references 213 and 214) in a concentric radial form, and the projections and depressions of said stator and the projections and depressions of said movable element are formed like comb-teeth parallel to the direction of movement of said concentric hinge spring. It would have been obvious to one of ordinary skill in the art at the time of the invention to use the concentric hinge spring of Jerman et al in the electromagnetic actuator of Lee et al in order to enable rotation of the movable element.

### ***Conclusion***

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after

Art Unit: 2872

the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Denise S Allen whose telephone number is (571) 272-2305. The examiner can normally be reached on Monday - Friday, 9:00am - 5:30pm.

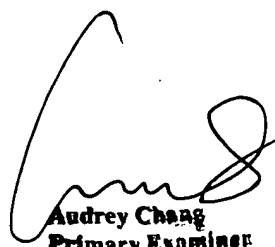
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Drew A Dunn can be reached on (571) 272-2312. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Denise S Allen  
Examiner  
Art Unit 2872



dsa



**Audrey Chang**  
**Primary Examiner**  
**Technology Center 2800**